

Rapid City RWU

**Management for Sustainable Ecological
Systems on the Northern and Central
Great Plains**





Staff

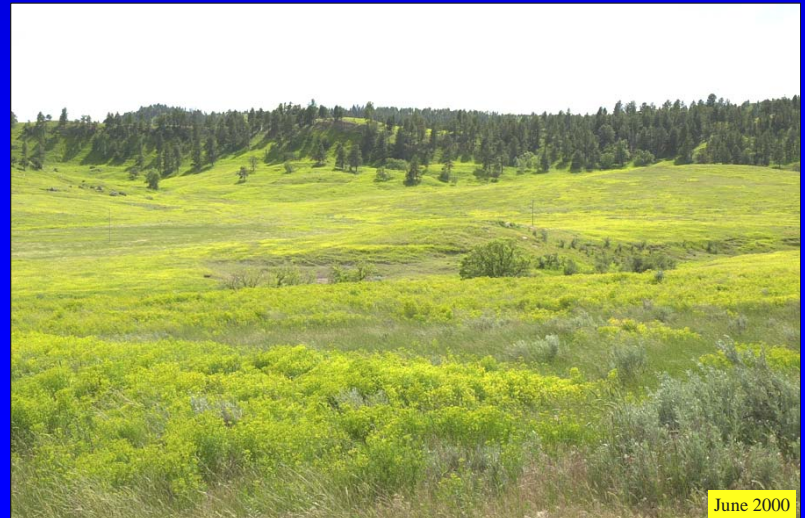
- **3 FS Scientists and 1 CSU Scientist**
- **CSU Research Associate**
- **2.5 FS Biological Technicians**
- **Business Manager & 2 Clerks**
- **2 to 4 Seasonal Technicians**
- **2 to 4 Graduate Students**

Cooperators

- **Federal Partners**
 - (NFS, SPF, ARS, NPS, BLM, FWS)
- **Local and State Agencies**
 - State Game & Fish (ND and SD)
- **Universities**
 - SDSU, BHSU, CSU, UW, Univ. of Missouri
- **Non-Government Organizations**
 - RMEF, WTF, TNC, Grazing/Timber Associations
- **Private Land Managers**

Ecology and Management of Great Plains Vegetation and Wildlife

➤ Emphasis is on integrated long-term studies



Mixed-grass Prairie



Grasshopper sparrow
Bobolink
Dickcissel
Sharp-tailed grouse
Ducks
Greater prairie chicken

Chestnut-collared longspur
Horned lark
Burrowing owl
Black-footed ferret
Mountain plover





Prairie Woodlands





Eastern kingbird
 Black-headed grosbeak
 Orchard oriole
 American goldfinch
 Brown thrasher
 Bell's vireo
 Yellow warbler
 Rufous-sided towhee
 White-footed mouse
 Deer
 Turkeys

Field sparrow
 Woodpeckers?
 Northern flicker
 Black-capped chickadee
 Meadow vole
 Prairie vole

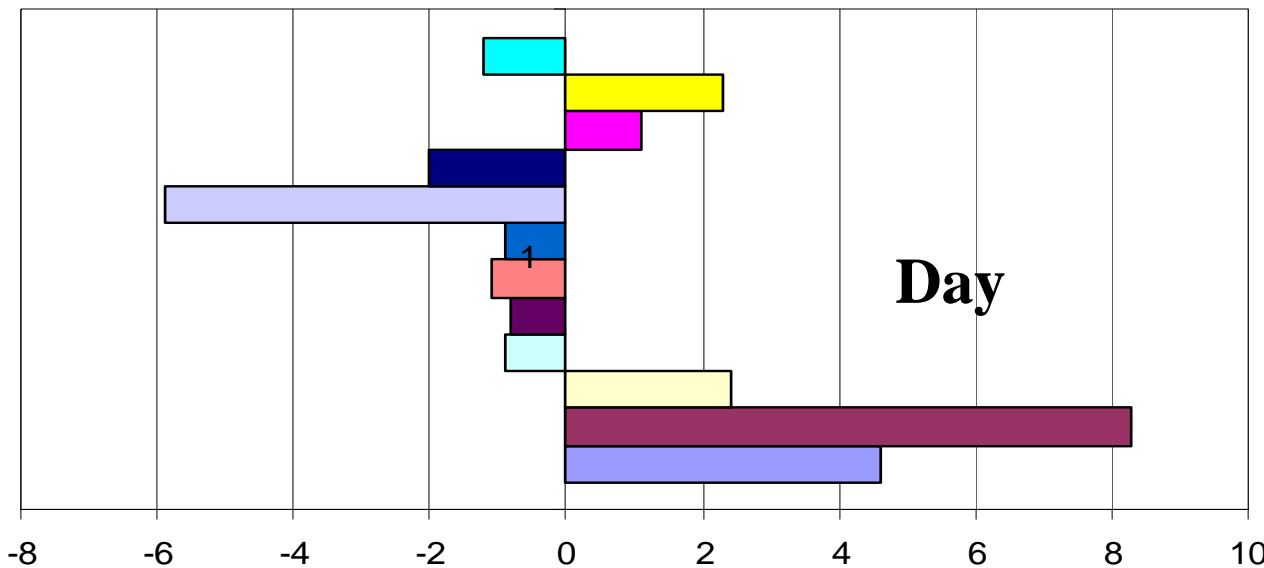




Wildlife Ecology and Management

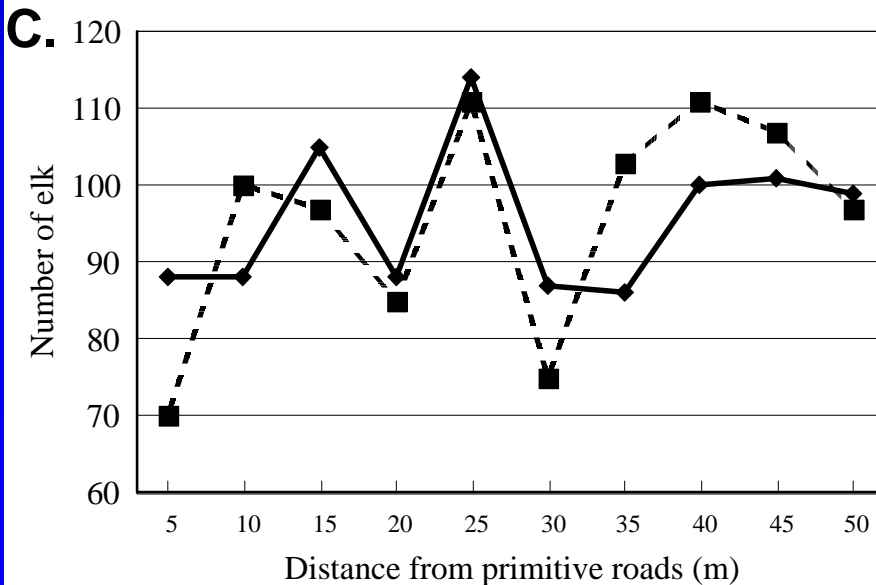
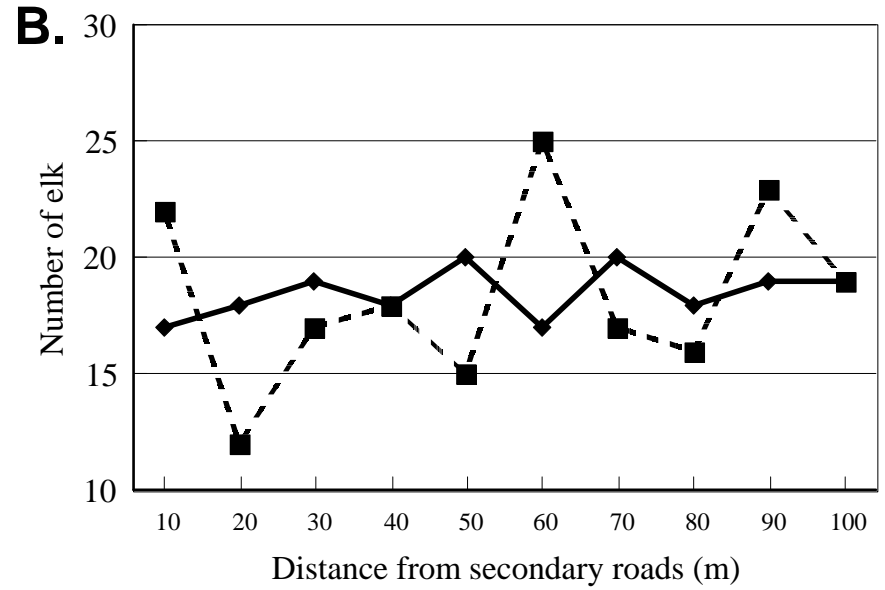
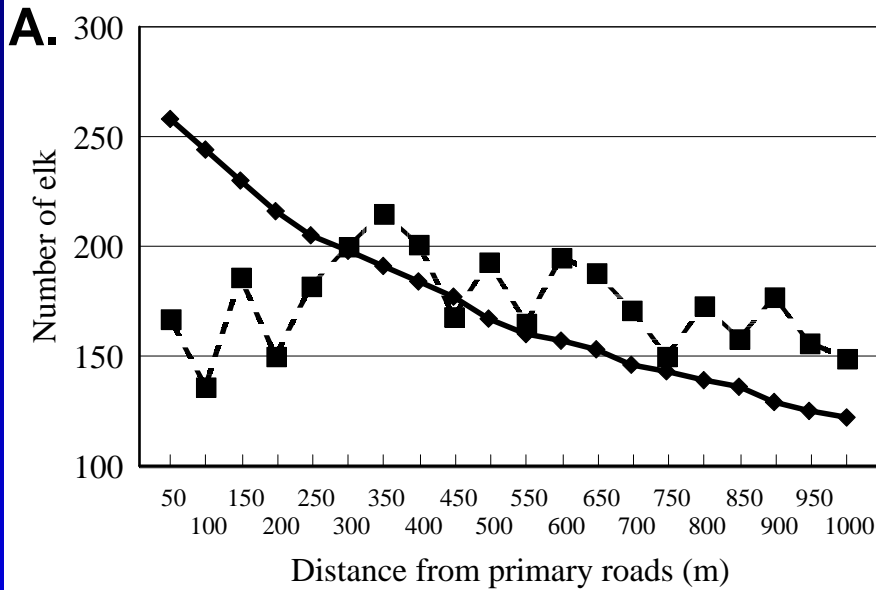


Elk Feeding Habitats from GPS telemetry



- Dense canopy white spruce
- Moderate canopy white spruce
- Open canopy white spruce
- Dense canopy ponderosa pine
- Moderate canopy ponderosa pine
- Open canopy ponderosa pine
- Shrublands
- Dense canopy aspen
- Moderate canopy aspen
- Open canopy aspen
- Private (mostly grassland)
- Grasslands

Elk response to roads



---■--- Elk observations
—◆— Expected observations

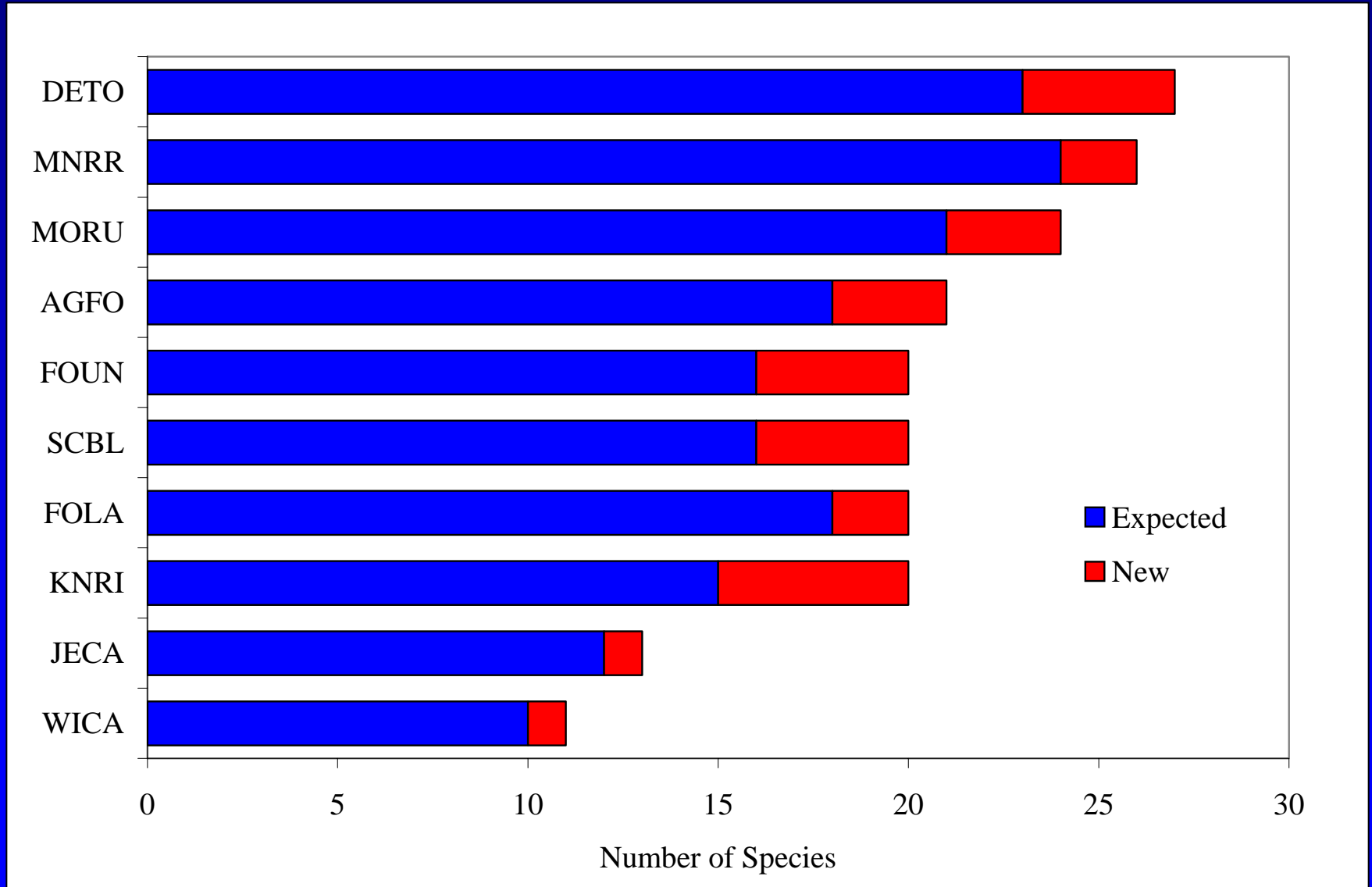
Nongame Bird Habitats in the Black Hills



- **Related bird associations to forest stand structure.**



Mammals of National Parks in the Northern Great Plains

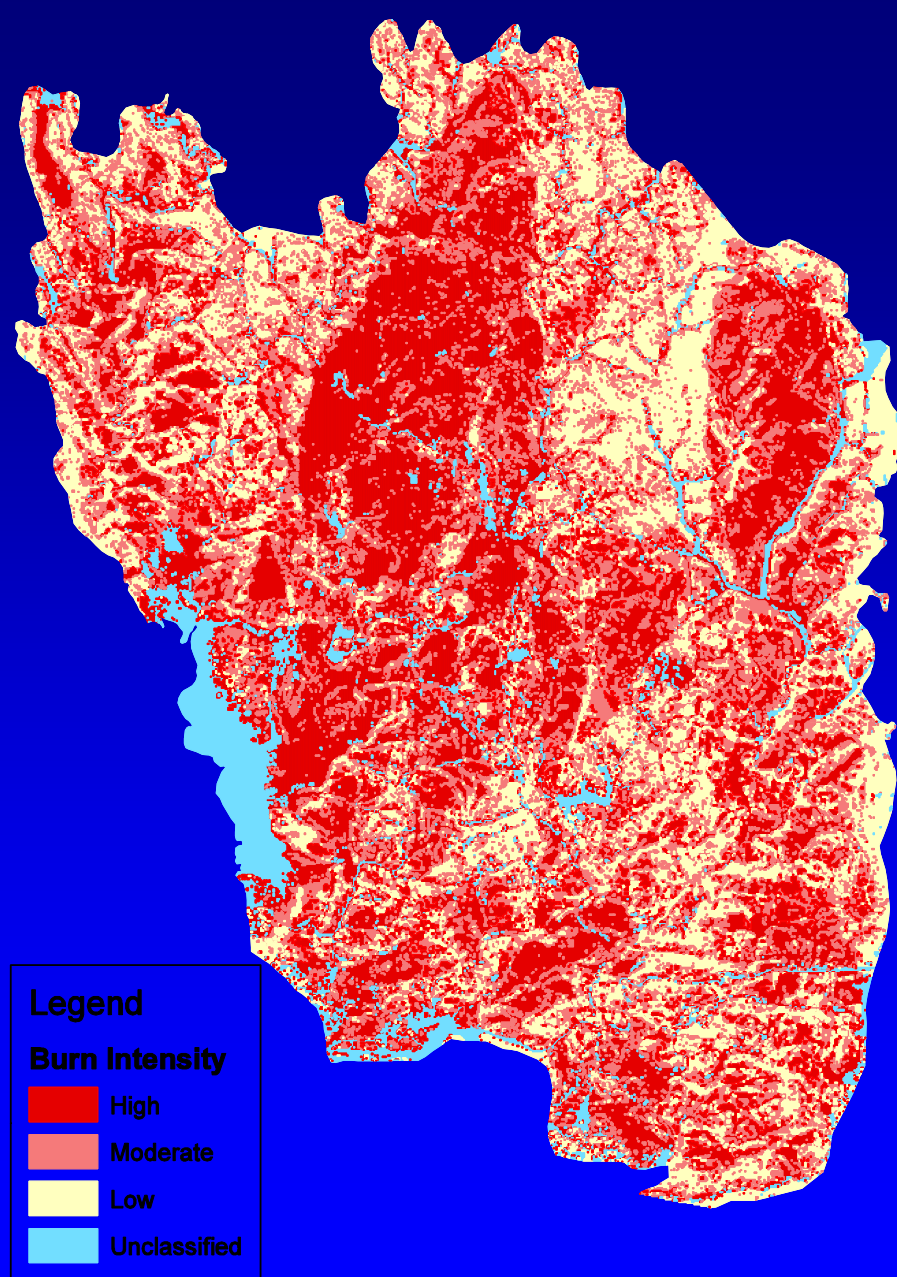
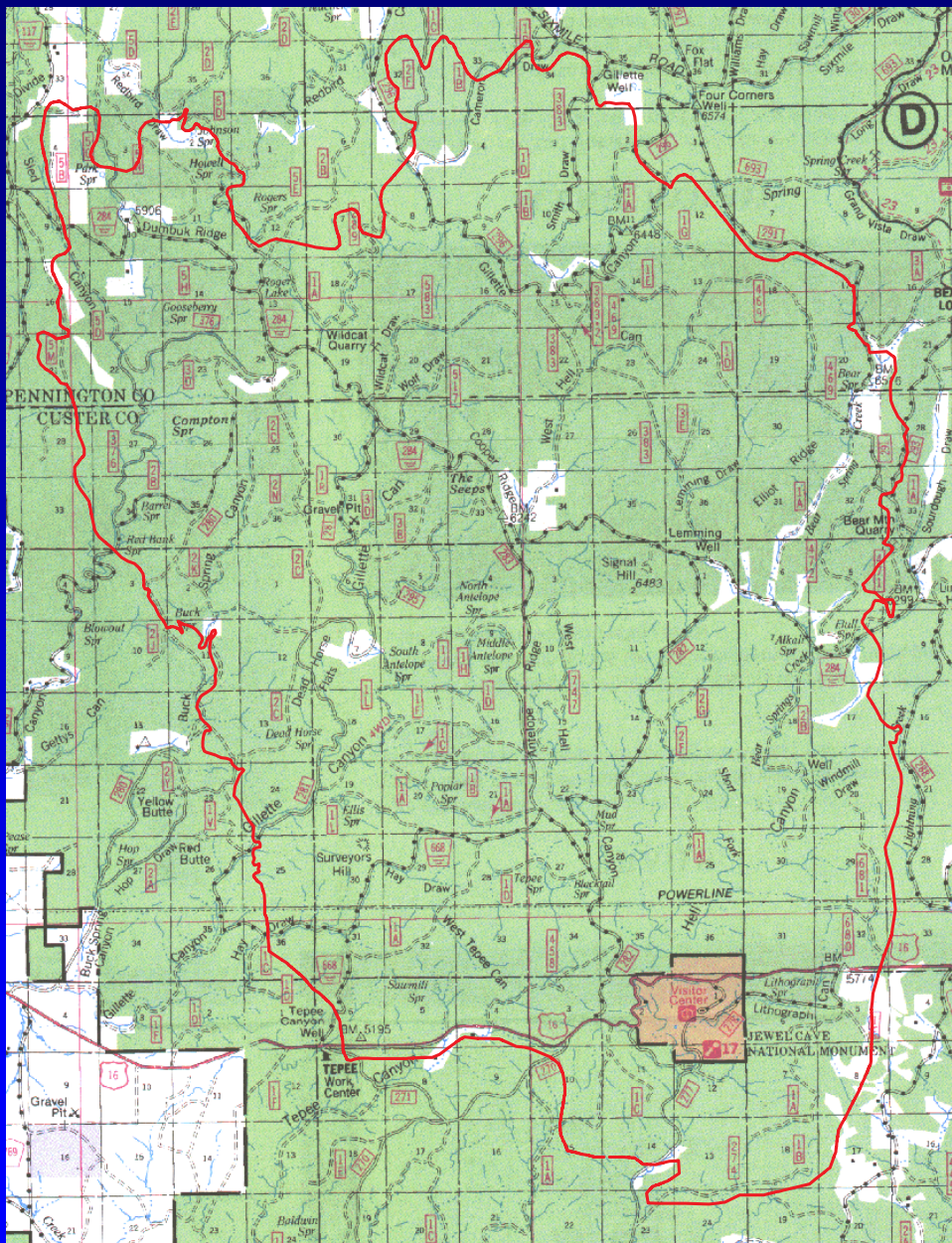


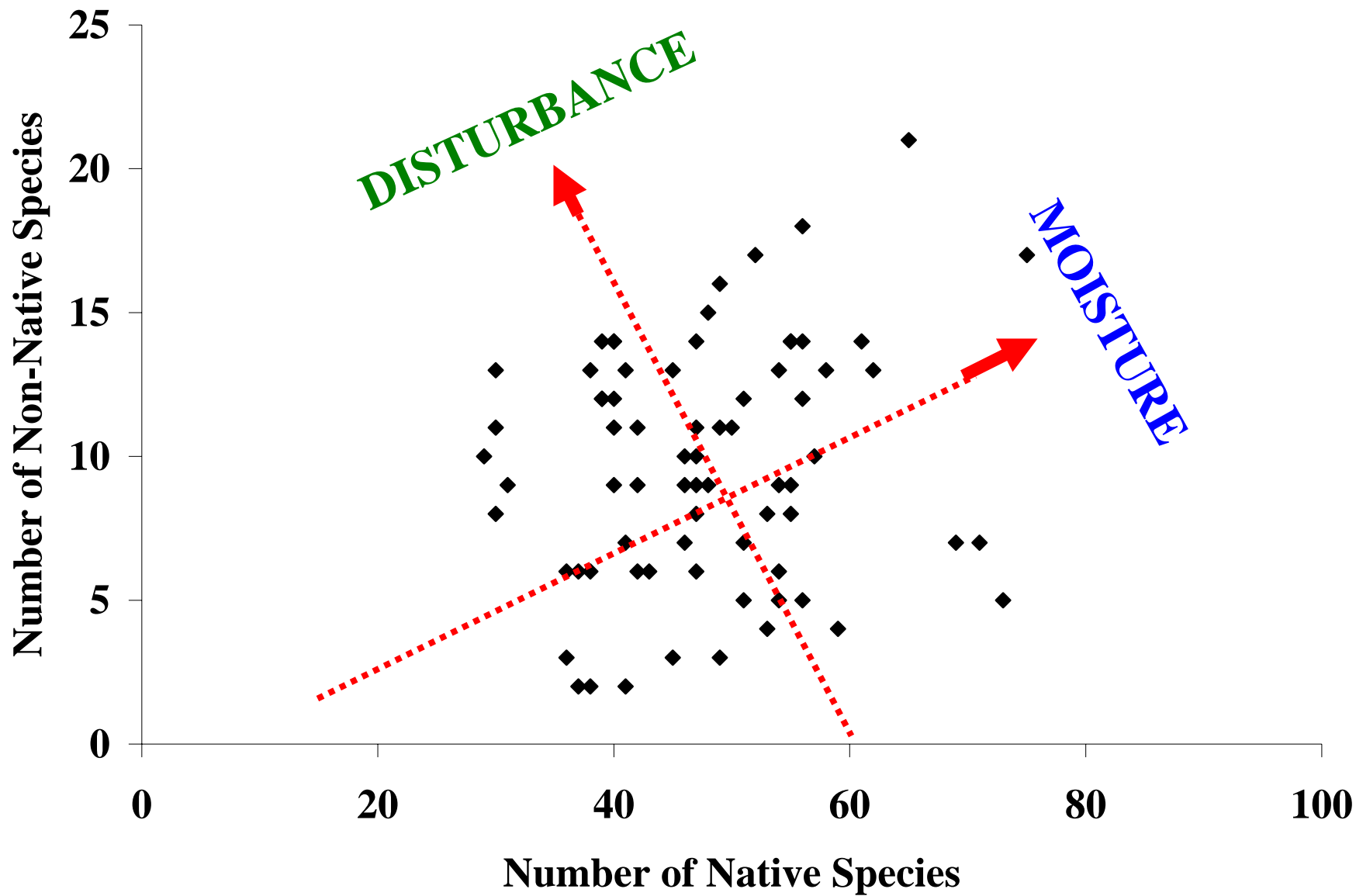
Summary and Recommendations

- **Add to Monitor List:**
 - **Wyoming Ground Squirrel**
 - **Badger**
 - **Meadow Jumping Mouse**
 - **Western Jumping Mouse**
- **Small to Mid-sized Carnivores Underrepresented**
- **Focus on Trapping for Diversity not Habitat Utilization**



Fire Enhanced Spread of Invasive Plants via Roads and Stream Corridors (Jasper Fire).





Biological Control of Leafy Spurge



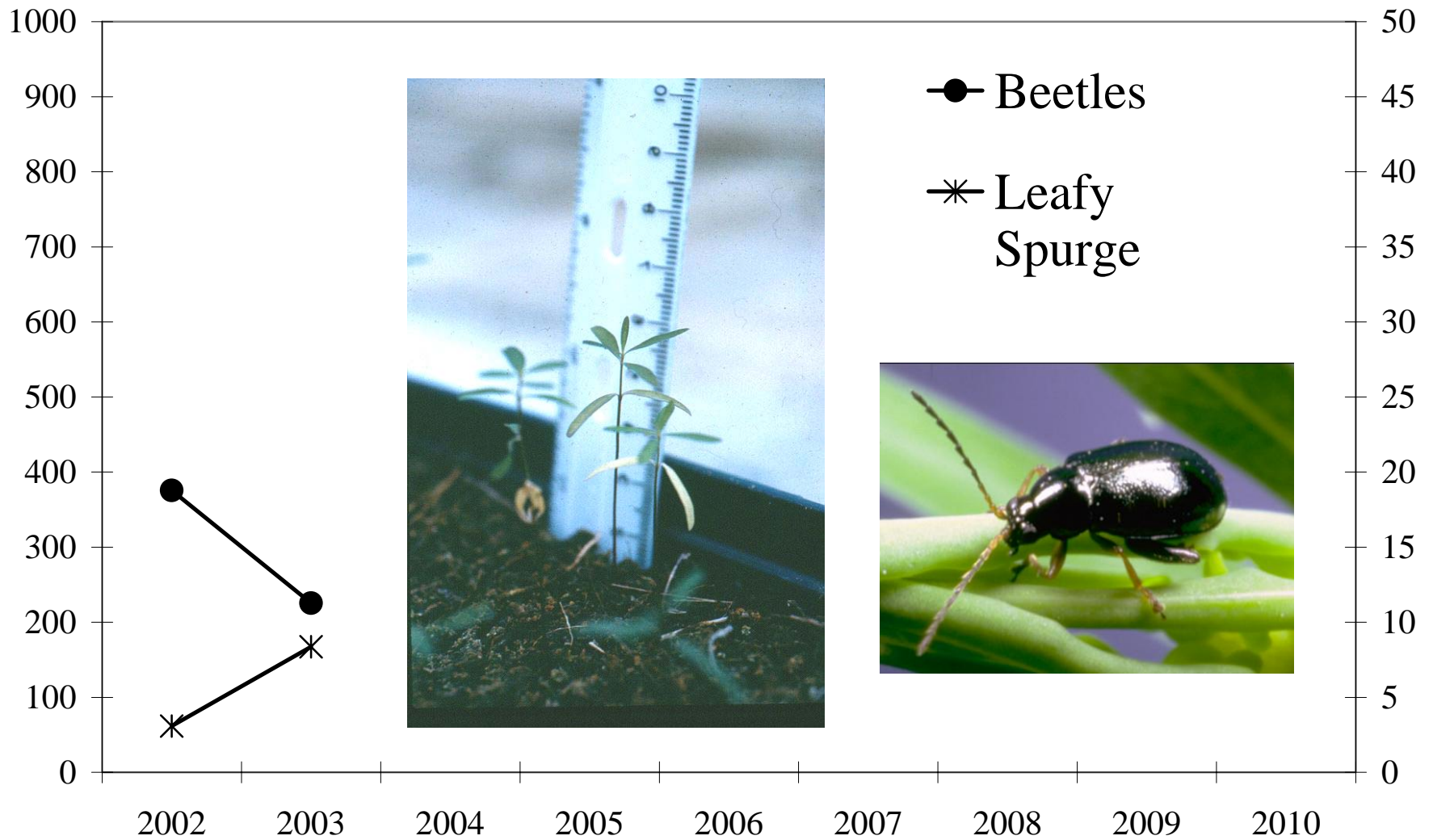
June 2000

Photo by Chad Prosser



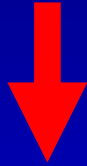
June 2002

Photo by Chad Prosser



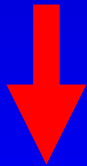
Non-Infested

- High Biodiversity



Infested

- Few Persistent Species



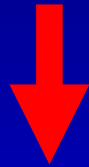
Control

- Persistent Species Dominate



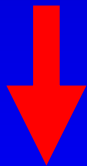
Non-Infested

- High Biodiversity



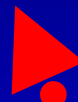
Infested

- Few Persistent Species



Control

- Dominant Persistent



Time



Restoration

Extensive Management

Rehabilitation

Intensive Inputs

Potential for Reinfestation



Potential for Host Shifting
Alteration of Food Webs

Dissemination of Research Result

- About 350 publications on file for dissemination
- Web Site:
 - <http://www.fs.fed.us/rm/rapidcity>
 - About 200 publications available for download